

Barriers to teaching Public Health

Historically it has been *difficult to engage medical students* when teaching public health.

- The **topic can seem quite remote**, especially when all your other teaching revolves around an individual patient .
- Public health is a considered specialty where few decisions have to be made urgently. This can make it **seem quite slow-paced** (even boring) when compared to a busy emergency room or delivery suite.
- Much of the public health syllabus **requires a working knowledge of statistics and epidemiology** which can deter those who chose medicine inspired by popular role models of doctors as action heroes.



Why Teach About Climate Change and Sustainability ?

Firstly, it is a **clinically important area**. The suggested health impacts of unabated climate change are significant, both in the UK and abroad (particularly in developing countries). They include

- An increase in gastrointestinal infections (the major killer of children under 5 worldwide),
- An increase in water borne and vector borne diseases,
- Increased emotional and physical damage resulting from more frequent adverse weather events,
- Increased death and destruction secondary to conflict over resources such as oil, water and food.

Secondly, it provides a **newsworthy topic that is obviously of national interest**. Students may not have heard of debates over screening or housing policy, yet they will almost certainly have been exposed to debate on climate change. Further, they are likely to **have some idea of the basic science**, since most science curricula cover the concept of the greenhouse effect and global warming.

Thirdly it allows **communication of key public health topics** with concrete examples that are familiar for the above reasons. Some examples of key concepts in public health that can be demonstrated in small group teaching on sustainability are:

- **Using best evidence** – exploring the evidence for and against climate change allows students to examine different levels of scientific and non-scientific evidence. It also provides an excellent forum for introducing the Bradford Hill criteria for causation (see Table).
- **Risk assessment** – Using documents like the Stern Report and the Intergovernmental Panel on Climate Change reports allows students to quantify risks to the country and the health / wellbeing of its population.
- **Importance of the wider determinants of health** – discussions on food,

water and energy security provide sharply focused examples of the importance of wider determinants on the health of populations.

- **Health inequalities and the inverse care law** – using the predictions that impacts of climate change will hurt developing countries disproportionately allows the facilitator to introduce the health inequalities that exist between and within countries, as well as examining the inverse care law by showing that communities that are most at risk of the damaging effects of climate change are those with the least resource and opportunity to mitigate or adapt to it.
- **Ecological Fallacy** – Students are offered the idea of an ecological fallacy such as “people in the United States of America do not care about climate change” and given the opportunity to discuss it and consider its implications.
- **Advocacy message** – students attending small groups are encouraged to consider how they would develop and deliver an advocacy message to a decision maker allowing them to explore the implications of the message, the source and the medium.
- **Methods for inducing behavior change** – students are given a short description of one or two academic concepts of behavior change (primarily the work of Prochaska and DiClemente) and asked to consider their application to changing behavior of individuals and communities.

Applying the Bradford Hill Criteria for Causation to CO₂ and Climate Change

Strength of Association	★★
Consistency (across studies)	★★★★
Specificity	★
Temporal Relationship	★★
Biological Gradient (dose-response)	★★★★
Plausibility (biological explanation)	★★★★
Coherence (with current scientific knowledge)	★★★★
Experiment (reversibility)	★
Analogy (considering alternative explanations)	★★

The Curriculum at Sheffield

- **Core Curriculum**
 - All first year medical students have a one hour long lecture covering the basic topic of sustainability and its relationship to health both nationally and internationally. This lecture also looks at links between energy availability and health, and examines the carbon footprint of the NHS in England.
- **Optional component**
 - Integrated Learning Activity (ILA) in sustainability and health. Fourth year medical students can select this ILA which offers five 2-hour long sessions which explore in depth the themes of climate change and human health, looking at the underlying problems of long-term energy security as well. It also explores the role and responsibilities of the NHS in addressing sustainability issues in the provision of medical care. The students are expected to prepare a group presentation to the Secretary of State for energy and Climate Change on the health impacts of climate change. Links are made to the core public health skills which are developed during the course of the teaching.

Some Barriers That May Be Encountered When Introducing Sustainability to the Curriculum

Fortunately the course designers at Sheffield have been extremely supportive and I have encountered very few obstacles to developing the teaching so far. Some of the problems I would anticipate in a less supportive environment include:

- **Competing for time in a busy curriculum** – Most Medical Schools have a huge number of skills and concepts they aim to offer students before they graduate, and achieving all of these in the allotted time for teaching inevitably introduces competition for time. By incorporating sustainability within the public health teaching this can be reduced when demonstrating the benefits of using this topic as a vehicle for teaching key concepts in public health.
- **Demonstrating relevance** – Potentially there may be course designers who do not see this as a relevant area for medical students to be taught on. Support from the GMC is available as they have recently recognised the importance of teaching in this area.
- **Lack of staff confident to teach this rapidly evolving area** – To convey many of the concepts described above requires some familiarity with the subject, but there are a multitude of excellent on-line resources and films that can quickly prepare lecturers as well as supportive national networks to enable teaching in this field.
- **Students have heard it all before** – I was concerned that students may have heard too much about climate change and therefore may not be receptive to the issue. My experience teaching this so far is that while they may have a grasp of the basic science underlying the problem, they have little concept of what it will mean to global health, and they are stimulated by discussions of this.